

# Environmental Reporting- Benchmarking

Pat Haller, Senior Energy Consultant  
[phaller@veic.org](mailto:phaller@veic.org)  
(802) 540-7745



# Benchmarking

The image is a screenshot of a Google search results page for the term "Benchmarking". At the top left is the Google logo. The search bar contains the word "Benchmarking" with a magnifying glass icon to its right. Below the search bar are tabs for "All", "News", "Books", "Images", "Videos", "More", "Settings", and "Tools". The "All" tab is selected and underlined. Below the tabs, it says "About 77,600,000 results (0.47 seconds)".

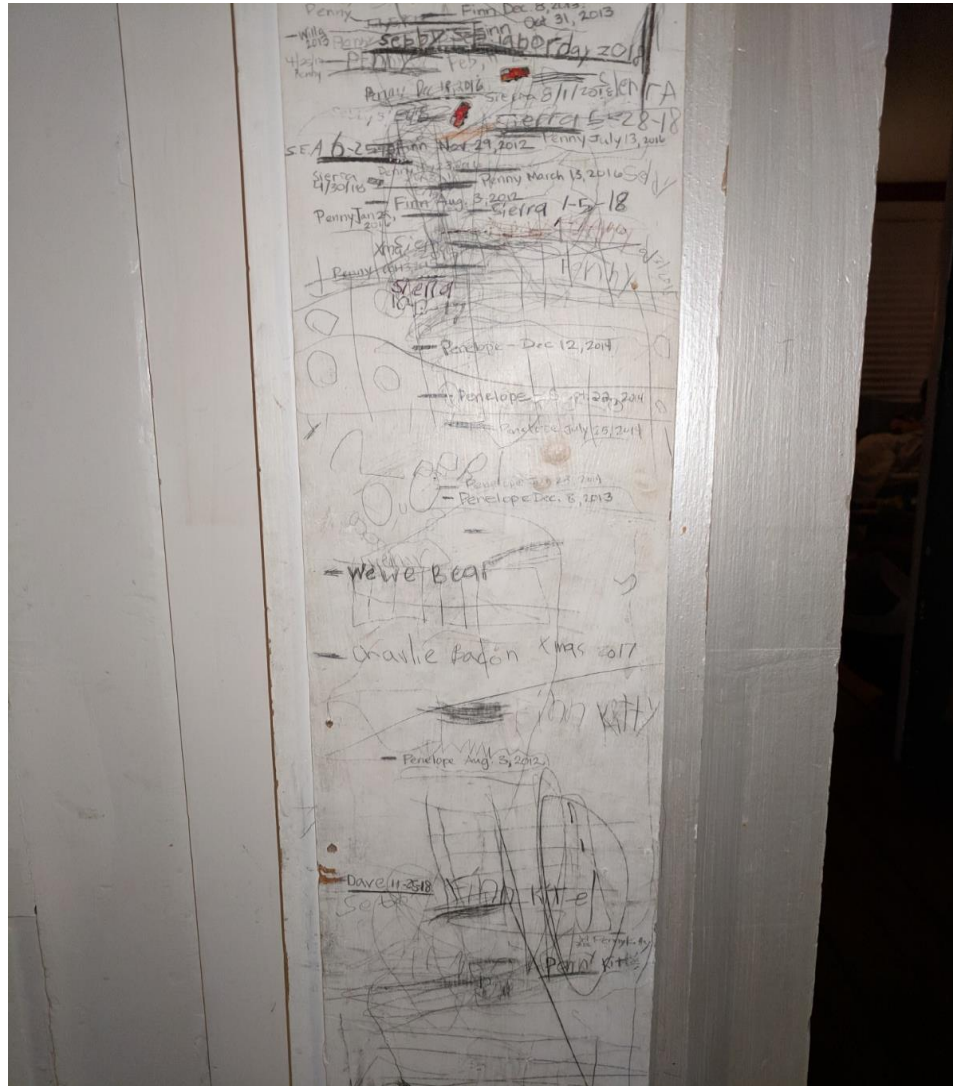
The main content area features a "Dictionary" section. It has a search input field with the placeholder text "Search for a word". Below this, the word "bench·mark" is displayed in a large, bold font, followed by its phonetic transcription "/ˈben(t)SHmärk/" and a speaker icon. The word is labeled as a "verb" and its gerund or present participle is given as "benchmarking".

The definition of "benchmark" is provided: "evaluate or check (something) by comparison with a standard." An example sentence follows: "we are benchmarking our performance against external criteria". A blue star icon is placed next to the definition. Below the definition, there are two bullet points: "• show particular results during a benchmark test." and "• the device should benchmark at between 100 and 150 MHz".

At the bottom of the dictionary section, there is a chevron icon pointing down and the text "Translations, word origin, and more definitions". To the right of the dictionary section, the word "bench·mark" is repeated in a large, bold font, followed by its phonetic transcription and a speaker icon.

At the bottom right of the page, there is a "Feedback" link.

# Why?

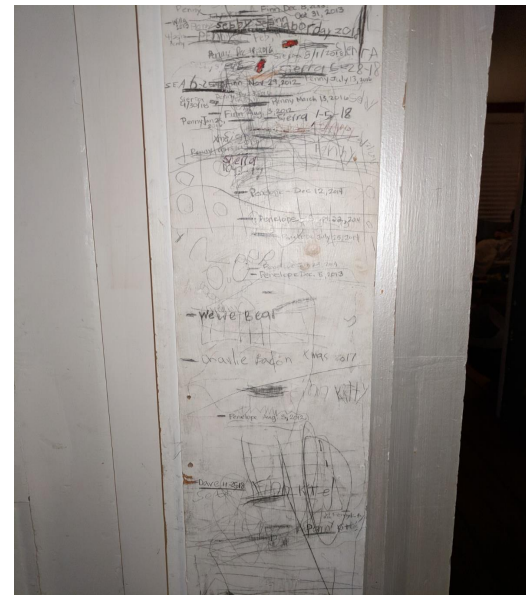


# Data-driven Decision Making



# Why?

- Measuring to manage
- Record Keeping
- Goal Setting
- Comparing
- Marketing
- Find Opportunities
- Proving progress
- *Staying Competitive*

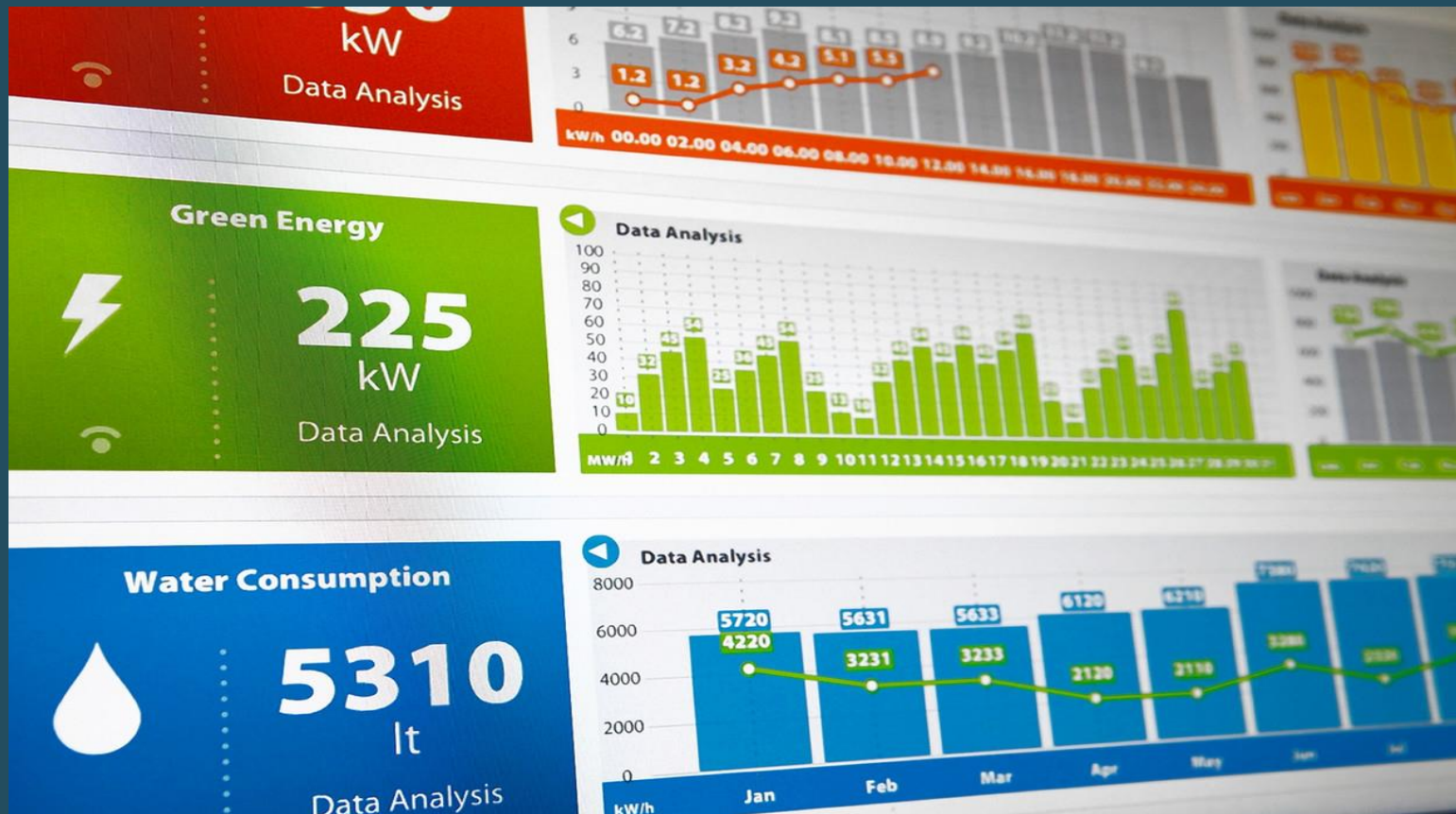


# How

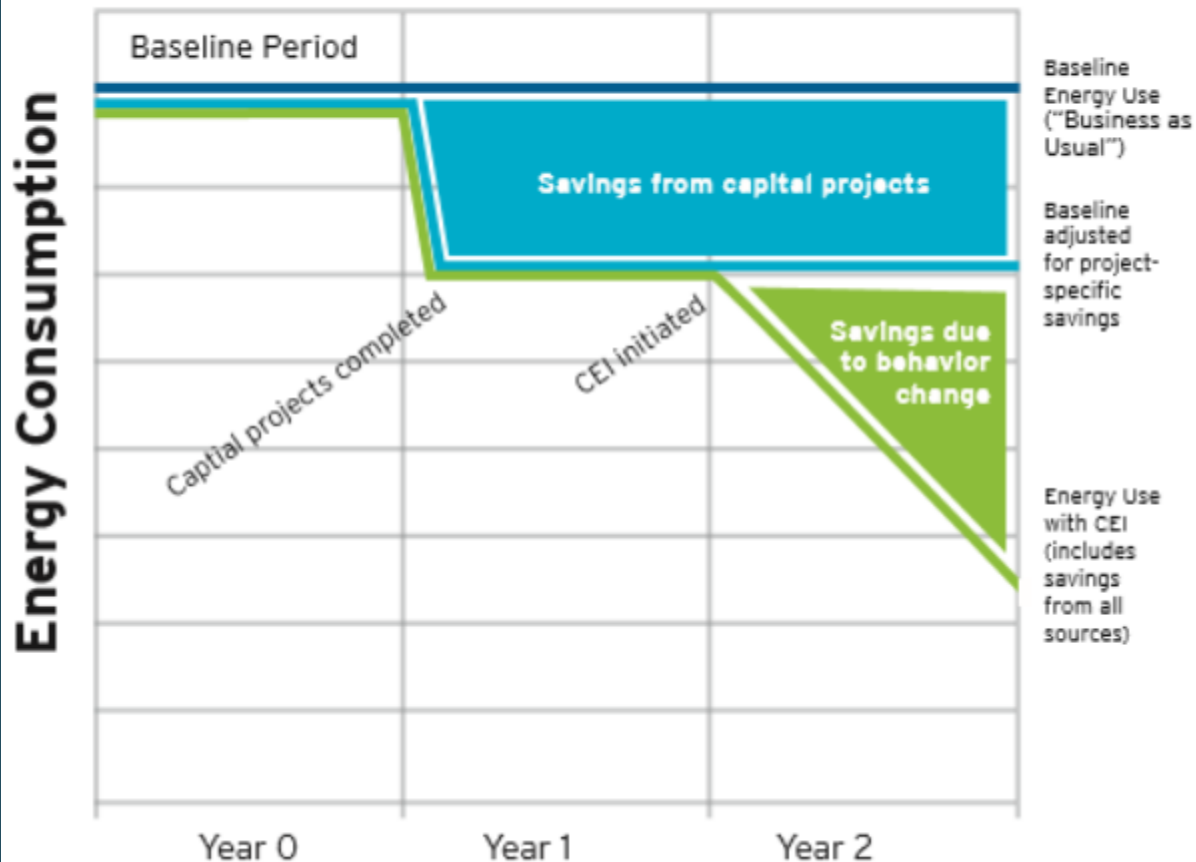
- Have to have a champion and buy-in
- Diversify team
- Invest time
- Goal setting- start small
- CELEBRATE Success as a team
- Keep up to date



# Measure = Manage



## Energy Use Trends Over Time





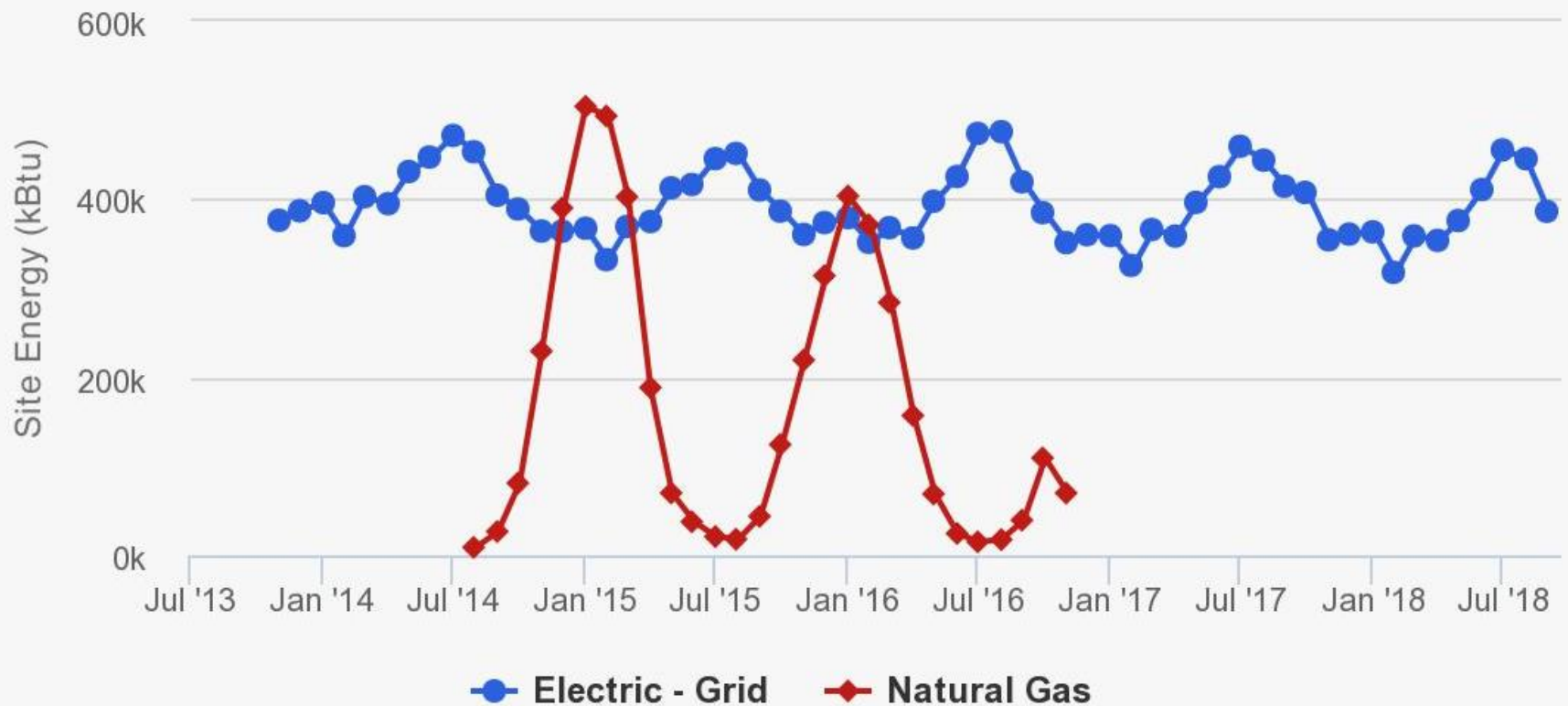
## Baseline/Model

- What does it tell us?
  - Are we making long-term progress?
    - Is the overall trend in the right direction?



# Data over time

Energy Use by Calendar Month (Not Weather Normalized)

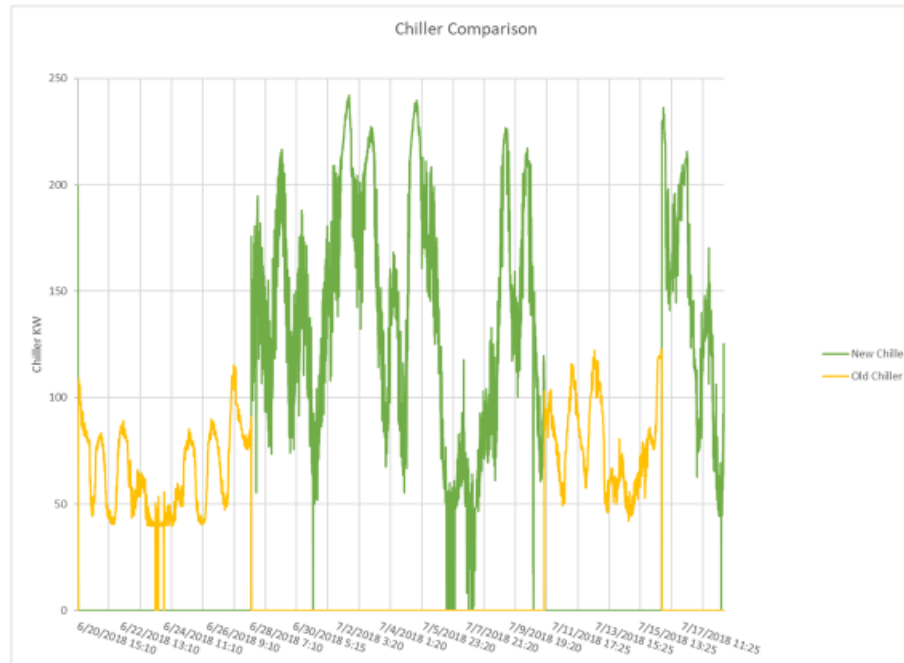


# Energy Models: Industrial and Commercial

- What does it tell us?
  - Are we experiencing short-term challenges?
    - Is backsliding evident?



# Which machine should be used?



# Benchmarking and Dashboards

## Snowmaking Dashboard Report

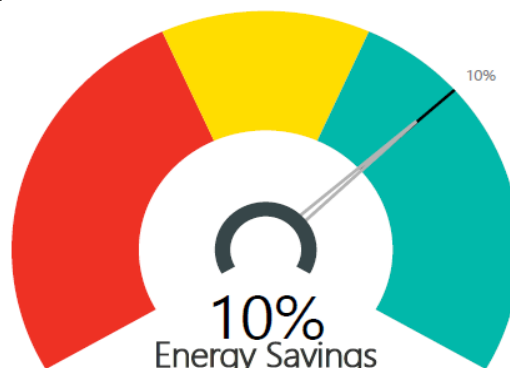


kWh Per kGal

35✓

Gallons Pumped

184,913,234



10%  
Energy Savings  
Vs. Model

10/14/2018 To 12/10/2018

kWh Savings

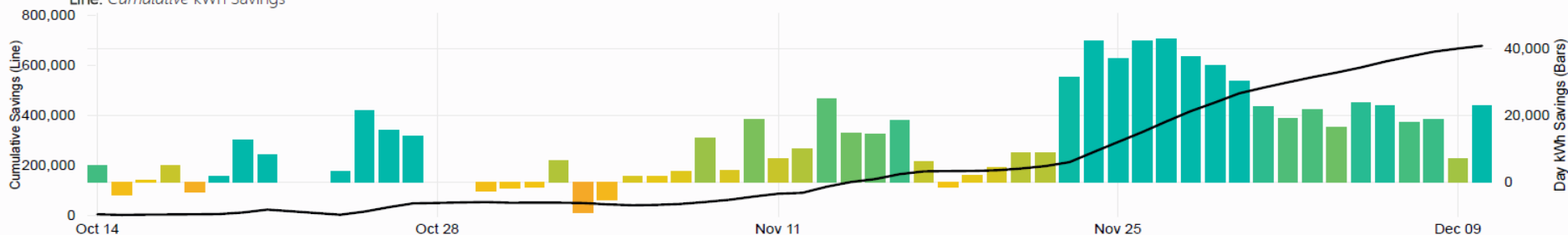
716,419✓

kWh Consumed

6,479,900

Bars: Day kWh Savings  
Line: Cumulative kWh Savings

Performance Over Time



Efficiency  
Vermont

# Benchmark tools

Local spreadsheets

Corporate tools/spreadsheets

Local Utility Centered- GMP dashboards

On-line Packages

ESCO Packages

Government based Packages, such as

DOE EnPi (energy performance indicator)

Energy Star Portfolio Manager



BEST  
Directory

Building Energy Software Tools

Formerly hosted by US Dept. of Energy

[Home](#)[FAQ](#)[Software Listing](#)[About](#)[Contact](#)[Sign In](#)[Register](#)

#### Capabilities

- ☐ Whole Building Energy Simulation
- ☐ Load Calculations
- ☐ HVAC System Selection and Sizing
- ☐ Parametrics and Optimization
- ☐ Energy Conservation Measures
- ☐ Code Compliance
- ☐ Ratings and Certificates
- ☐ Utility Bill and Meter Data Analysis
- ☐ Weather Data and Climate Analysis
- ☐ Building Automation
- ☐ Building Energy Auditing
- ☒ Building Energy Benchmarking
- ☐ Building Energy Monitoring
- ☐ Lighting Simulation
- ☐ Air Flow Simulation
- ☐ Life Cycle Analysis
- ☐ Solar and Photovoltaic Analysis
- ☐ Support Services
- ☐ Training Services
- ☐ Other

#### Building Type

- ☐ Subsystem Level
- ☐ Commercial

## Software Listing

Total Listed Programs: 18



### Benchmark My Building

Is your building energy efficient? This building energy performance tool by Lucid, ENERGY STAR & the DOE will tell you in seconds. Try it today!

[Building Energy Benchmarking](#)

Commercial, Residential

**Last Software Update:** 01 June 2017 | **Last Entry Update:** 18 July 2018

**Ratings** ☆☆☆☆☆ | **Reviews** 0 | **Add to compare**



### AET (Architect's / Engineer's Energy Tool.)

AET is a Windows 10 App for quick energy use evaluations of commercial or residential buildings, and can be used by homeowners as well as students, architects and engineers. Included is a built-in weather database for over 2000 cities worldwide.

[Whole Building Energy Simulation](#) | [Weather Data and Climate Analysis](#) | [Building Energy Benchmarking](#)

Commercial, Residential

**Last Software Update:** 05 August 2018 | **Last Entry Update:** 07 August 2018

**Ratings** ☆☆☆☆☆ | **Reviews** 0 | **Add to compare**

Efficiency  
Vermont



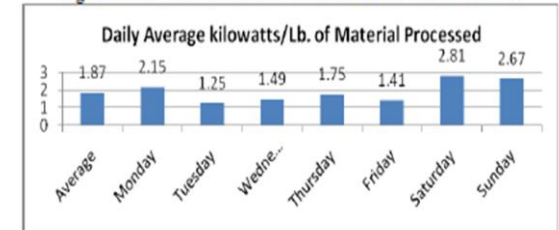
# What are you looking for?

- Each tool has limitations
  - Complicated/too simple
  - Time intensive
  - Comparison Database?
  - Scope is usually only energy use
  - Producer/Non Producer tools

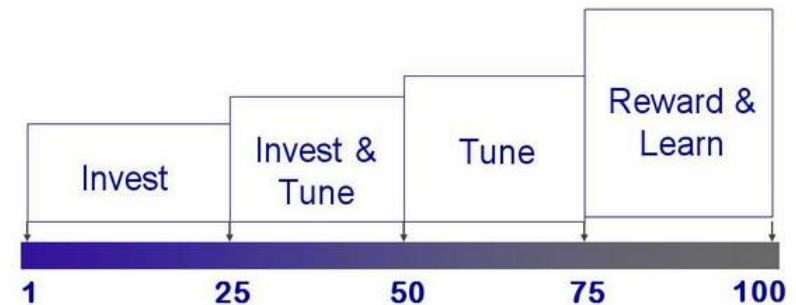
# Metric outputs

- Energy Use Intensity (EUI)

Figure 1. Kilowatt Hours Per Pound of Material Processed



- Benchmark score



Others; GHG per XXX

# EPA and DOE

- EPA – Some great tools
  - Energy Star Energy Tracking Tool
  - Energy Star EPI (Energy Performance Indicator)
  - Energy Star Portfolio Manager
- DOE- Benchmark database
- Brewers Association
  - Sustainability
  - <https://www.brewersassociation.org/best-practices/sustainability/sustainability-manuals/>



## SUSTAINABILITY



### SUSTAINABILITY BENCHMARKING TOOLS

Check the progress of your brewery's sustainability efforts by reviewing the 2015 – 17 Sustainability Benchmarking reports and utilizing the online tools developed by the Brewers Association and Antea Group to record and study your efforts.

Your participation will benefit your brewery, as well as, help the Brewers Association form a clearer picture of industry practices.

Through the benchmarking tool and sustainability manuals, the BA and the Sustainability Subcommittee encourages conscientious brewing practices that will ensure the long-term success of the craft beer industry.

#### Benchmarking Report

The reports provide a platform for the craft brewing community to share best practices for identifying how to use water more efficiently, generating less wastewater and solid waste, decreasing total energy usage and reducing greenhouse gas emissions.

#### Download and Study the Report

The 2015 Sustainability Benchmarking Report focuses on utility usage and waste management in craft breweries and includes 2014 utility, resource and production data from 79 breweries, representing a robust variety of production sizes and geographic locations.

The 2016 Sustainability Benchmarking Update summarizes data gathered from 2015 and focuses on four environmental attributes as key performance indicators (KPIs): electricity, natural gas, water, and carbon dioxide. Wastewater costs and greenhouse gas emissions are also discussed, along with specific case studies related to brewery sustainability initiatives.

The 2017 Sustainability Benchmarking Update focuses on analysis of water, energy, and emissions efficiency in the craft brewing industry. The study also provides

#### Step 1: Get Started

[View the Sustainability Benchmarking Reports](#)

## INSIGHTS AND ANALYSIS

### ECONOMIST

Bart Watson

Benchmark Your Salary and Benefits with BA Benchmarking Data



## STAFF VOICES

### FEDERAL AFFAIRS MANAGER

Katie Marisic

List of Proposed Tariffs on Goods from China Includes Brewery Machinery



Department of Commerce Announces Preliminary Antidumping Duty Determinations on Refillable Stainless Steel Kegs -

Katie Marisic



## A TOAST TO

Nilanjan Datta

Left Nut Brewing Company

[Read More >](#)

# Electric Data- help

Name:	BREWING CO										
Company:	BREWING CO										
Address:	802 Vermont										
Provider:	Green Mountain Power Corporation										
Account:											
DU_PREMISE_ID	READDATE	YEAR	MAX(DAYS)	KWHTOT	KWHPEAK	KWHOFF	KWPEAK	KWOFF	PFACT	SVC_POINT_EXT_ID	METER
	8/30/2016	2016	30	608							
	9/29/2016	2016	31	707							
	10/17/2016	2016	19	1040							
	10/28/2016	2016	12	560							
	11/29/2016	2016	33	2080							
	12/29/2016	2016	31	2480							
	1/31/2017	2017	34	11360							
	2/28/2017	2017	29	17280							
	5/31/2017	2017	33	23200							
	6/30/2017	2017	29	23520							
	7/28/2017	2017	27	23680							
	8/31/2017	2017	33	30400							
	9/29/2017	2017	28	26720							
	10/30/2017	2017	30	24000							
	11/29/2017	2017	29	22160							
	12/28/2017	2017	28	23760							
	1/29/2018	2018	31	27040							
	2/28/2018	2018	29	29840							
	3/29/2018	2018	28	19120							
	4/27/2018	2018	28	21200							
	5/30/2018	2018	32	26800							
	6/28/2018	2018	28	26480							
	8/1/2018	2018	33	35520							
	8/30/2018	2018	28	28240							
	9/28/2018	2018	28	26800							
	10/30/2018	2018	31	26000							
	11/29/2018	2018	29	22240							
	12/28/2018	2018	28	21440							
	1/29/2019	2019	31	23120							
	2/28/2019	2019	28	24192	14600	9592	96	64	86		
	3/29/2019	2019	29	24025	15052	8973	89	60	86		
	4/29/2019	2019	31	23313	13691	9622	90	65	85		
	5/30/2019	2019	31	29008	17954	11054	90	67	86		

# Energy Star Portfolio Manager

- Relatively easy
- Energy, Water, and Waste
- Can use to benchmark against others



<https://portfoliomanager.energystar.gov/pm/login.html>



Help

Language: [English](#) | [Français](#)

## Welcome to Portfolio Manager

Helping you track and improve energy efficiency across your entire portfolio of properties.

Username: \*

Password: \*

[I forgot my password.](#)  
[I forgot my username.](#)

**Sign In**

**Create a New Account**




[ENERGY STAR  
Buildings Homepage](#)




[Take a Training](#)



[Learn More About  
Portfolio Manager](#)

 These links provide more information from ENERGY STAR and are not available in French.

 You are accessing a U.S. Government information system. System usage may be monitored, recorded, and subject to audit. Unauthorized use of the system is prohibited and subject to criminal and civil penalties. Use of the system indicates consent to monitoring and recording.

Follow Us    

[Contact Us](#) | [Privacy Policy](#) | [Browser Requirements](#) | [ENERGY STAR Buildings & Plants Website](#)





DEC. 17, 2018

---

# Thanks!

Patrick Haller, Efficiency Vermont  
[phaller@veic.org](mailto:phaller@veic.org)  
(802) 540-7745

